

**ABSTRACT**

An network of proxy servers overlaying a wide area network that comprises a plurality of autonomous systems establishes a hierachial multicast tree overlay network structure for providing streaming live media from media sources to end users. The tree structure is constructed and maintained by peer-to-peer negotiations between proxy servers that identify proxy servers and data paths that optimize utilization of network resources based upon minimizing costs as a function of loadings. The proxy servers maintain information about the status of neighboring proxy servers, and exchange messages to redirect join requests to more suitable proxies, to redistribute portions of their own loads when they are overutilized, and to consolidate loads when they are underutilized.